

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
7 July 2005 (07.07.2005)

PCT

(10) International Publication Number  
**WO 2005/061889 A1**

(51) International Patent Classification<sup>7</sup>: **F04B 17/03**, 9/04

(21) International Application Number:

PCT/GB2004/005219

(22) International Filing Date:

14 December 2004 (14.12.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

0329585.4 20 December 2003 (20.12.2003) GB

(71) Applicant (for all designated States except US): **ITW LIMITED** [GB/GB]; Admiral House, St Leonards Road, Windsor, Berkshire SL4 3BL (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **SMITH, Alan** [GB/GB]; 13 The Crescent, Burntwood, Staffordshire WS7 2PA (GB).

(74) Agents: **CARPENTER, David** et al.; Marks & Clerk, Alpha Tower, Suffolk Street Queensway, Birmingham B1 1TT (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

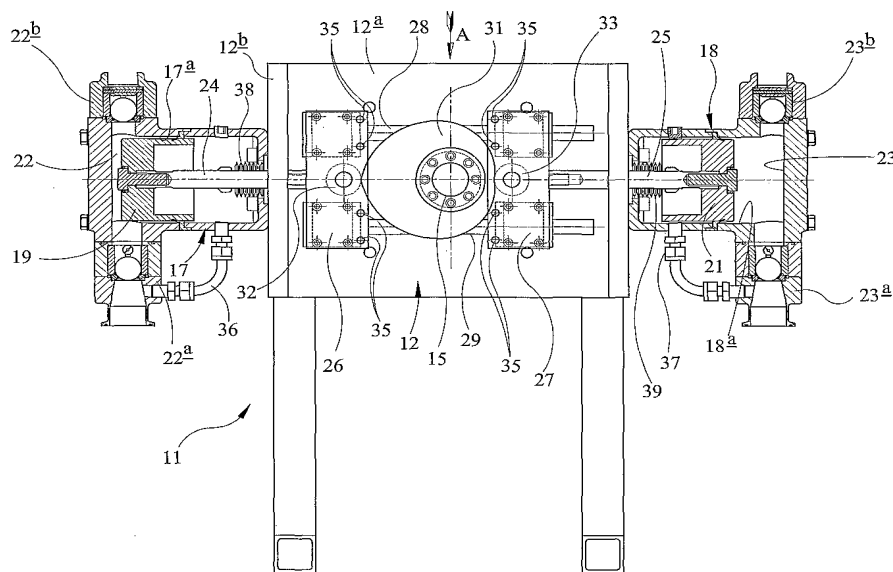
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PUMPS



(57) Abstract: A pump primarily for liquid paint comprising first and second pistons (19, 21) reciprocable rectilinearly in respective first and second cylinders (17, 18), said first and second pistons being moved relative to their respective pistons by operation of an A. C. electric motor (13) the rotary output shaft of which is coupled to said first and second pistons by means including a constant velocity cam (31) and cam follower (32, 33) mechanism converting rotary motion of the output shaft into reciprocatory motion of said first and second pistons 180° out of phase with one another.



WO 2005/061889 A1